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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Yasuaki Ootera

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EXAMINER

VERDERAME, ANNA L

ART UNIT

PAPER NUMBER

1756

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/804,100	Applicant(s) OOTERA, YASUAKI	
	Examiner Anna L. Verderame	Art Unit 1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 5-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-8 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-4, drawn to an optical recording medium, classified in class 369, subclass 94.
 - II. Claims 5-7, drawn to a method for making an optical recording medium, classified in class 427, subclass 162.
 - III. Claim 8, drawn to an apparatus use in the manufacture of an optical recording medium, classified in class 118.
2. Inventions of group I and group II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case The optical recording media may be formed by forming a first reflection layer, coating the intermediate layer on this and curing it after/during an embossing process to form pits, coating the translucent layer and then coating the final substrate as a resin and curing it.
3. Inventions group I and group III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different

designs, modes of operation, and effects (MPEP § 802.01 and § 806.06). In the instant case, the different inventions have different modes of operation and the final optical recording medium cannot be used with an apparatus for its manufacture.

4. Inventions group II and group III are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus can be used to form a medium with two fully reflective layers (double sided optical recording media) and/or coating reflective layers on articles other than optical recording media, such as diffraction gratings and the like (Fresnel zone plates, etc.)

5. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction were not required because the inventions have acquired a separate status in the art in view of their different classification and divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with Jeffrey Karceski on October 20, 2006 a provisional election was made with traverse to prosecute the invention of an optical recording medium, claims 1-4. Affirmation of this election must be made by applicant in replying to this Office action. Claims 5-8 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

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6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim recites “a translucent film is formed of one of silver and silver alloy containing silver as the main ingredient. Further defining that a silver alloy contains mostly silver is redundant because a silver alloy inherently contains silver as its main component.

10. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamada *et al.* (JP 10293945). (Machine translation attached)

Yamada *et al.* teaches a comparative example 1 in which an optical recording medium, comprising an aluminum alloy film formed on a polycarbonate substrate to a thickness of 60 nm, an Ag film, formed on a second substrate, with thickness 17.5 nm and an intermediate layer formed of a photocurable adhesive between the metal layers, is manufactured. In a second comparative example, Yamata *et al.*, in comparative example 7 forms an optical recording medium similar to the above mentioned comparative example but uses an AgCuW alloy to form the semi-reflective film (0024). The range of 12.5-22.5nm for the silver layer is disclosed [0009].

Yamada *et al* gives an example of a semi-transparent layer made of both Ag and an alloy of Ag. The thickness of both semi-transparent layers is the same and falls in the range claimed in this application. The thickness for the Al reflective layer in both examples is 60 nm, which falls outside the range claimed in claim 4 of this application.

11. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Artani *et al.* [(WO 02/054396)(US 2003/0137924 is English equivalent)].

Artani *et al* has an inventive example in which a first and second substrate

having a first and second information recording layer are laminated together. The recording layer of substrate one was prepared by applying an AgCu alloy thin film having a thickness ranging from 10-15 nm to a substrate. The recording layer of the second substrate was formed by depositing a reflective film made of AlTi alloy having a film thickness of 50 nm [(15/14-25) or (0099-0101)]. The Al layer may be 35-60nm[(16/2-7) or (0103)].

Artani further specifies that in this example the film thickness of the AgCu containing alloy film deposited on the first substrate is selected so that when an Al alloy having a film thickness ranging from 35-60nm is formed as the reflective film on the second substrate by laser beams having a wavelength of 660nm, reflectances of the first information recording layer and that of the second information recording layer may become nearly equal to each other.

12. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Artani *et al* (WO 02/054396)[US 2003/0137924 is the English equivalent].

It would have been obvious to one of ordinary skill in the art to form a medium similar to that of the cited example but where the Al reflective layer has a thickness ranging from 35-40nm with the expectation of forming a functional optical recording medium based upon the disclosure at (16/2-7 [0103]).

13. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yamasaki *et al*. (2002/0043328).

Yamasaki et al teaches the manufacture of a multilayer optical recording medium. An aluminum silver or silicon film is deposited to a thickness of 8nm by sputtering on a transfer substrate with a pattern of irregularities to form a semi-transparent film that has a pattern corresponding to the above pattern of irregularities. This is the second recording layer. This metal recording layer is transferred to a flexible film by separating the metal recording film from the substrate at their boundary. Next, an ultraviolet setting resin-based adhesive is supplied on the second optical recording layer and flattened by spin coating. An aluminum reflection film with a thickness of 15 nm is made in the same way as the semi-transparent film. This is the first recording layer of the optical recording medium. Finally, the first and second recording layers were bonded in a state facing each other (0062-0070).

The examiner holds that one would immediately envision the embodiment where the second recording layer is Ag as this is one of the only choices presented and therefore the claims 1 and 2 are anticipated. Alternatively, if this position is not upheld the examiner holds that it would have been obvious to one of ordinary skill in the art to use Ag as the 8nm film based upon the disclosure to do so at (0062).

14. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Tokuda *et al.* (WO/02/095744 [US 2004/0151869 is English equivalent])

Tokuda *et al.* teaches the manufacture of a DVD comprising a silver translucent

reflection film provided on a first DVD substrate and a gold translucent reflection film provided on a second DVD substrate. The two substrates were adhered using an adhesive so that the reflecting films faced inward ((10/22-11/1), [0044]).

The examiner holds that the DVD substrate contains information on its surface in the form of pits or grooves.

Claim 1 of this application does not require Al or that the second metal layer be fully reflective. Therefore, the cited Tokuda *et al.* WO 02/095744 example meets the requirements of claim 1 of this application.

15. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tomiyama '104.

Tomiyama *et al.* teaches the manufacture of an optical recording medium. A first signal substrate, made of a resin and containing virtually concentric signal pits or grooves formed on one side, was coated with a translucent film of Au, Ag, or Al. A second signal substrate containing concentric signal pits or grooves was coated with a reflective film of Au, Ag, or Al. With its reflective film surface up an adhesive such as an ultraviolet-curing resin was applied to the reflective film surface. The translucent film of the first is adhered thereto so that the metal layers face inward towards one another (4/40-5/3).

The examiner holds one would immediately envision the embodiment where the translucent layer is composed of Ag and the reflective layer is Al as this is one of only nine possibilities presented and on this basis the claim is anticipated. Alternately, if this position is not upheld then the examiner holds that it would have been obvious to one of

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ordinary skill in the art to use an Ag semi reflective layer and an Al reflective layer based upon disclosure to do so at (4/45-52) with a reasonable expectation of forming a useful dual layer medium.

16. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimori et al '547.

Fujimori et al. teaches the fabrication of an optical recording medium. First a transparent metallic film comprised of Au, Ag, Ni, or Al is formed on a polycarbonate substrate containing pits to have a thickness ranging from 10-20 nm(5/29 and 50-55). Next, an ultraviolet curing resin is applied to the metallic information recording surface above, and a stamper is used to form pits on the surface of the resin. Next, a second reflective film of Al, Al alloy, Ag, Au, or Cu is formed. This reflective film is preferably 80-120nm(5/3-7/65).

It would have been obvious to one of ordinary skill in the art to use a silver translucent film in combination with an aluminum reflective film based upon the disclosure to do so at (5/50-55) and (7/55-58). Further, it would have been obvious to make a translucent film having a thickness of 10-20 nm with the expectation of forming a useful optical recording medium with translucent silver reflective film based upon the disclosure to do so at (5/50-55).

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 6,512,735- teaches an Al reflection film of thickness 20nm is coated onto a

polycarbonate substrate with pits having a width in the range of 80-250nm. Next, a UV curing resin is coated onto the Al reflection layer (10/50-65)

US 6,352,656-A thickness of 70 nm is used as the design depth of the grooves (5/36).

US 6,532,206- The depth of the phase pit is set to be not less than 60nm and not more than 90nm (preferably not less than 70 nm and not more than 80nm). (see claim 2)

US 2004/0042382- The width of the pits in a read only medium is preferably from 80-250 nm, more preferably from 100-220nm. The height (depth) of the pits is preferably from 20-150nm, more preferably 30 to 100nm[0015 and 0018].

US 6,017,603- An example teaches the use of a gold translucent film but also suggests alternatives to be used to form the translucent reflective film including: gold, silver, silicon, a silicon compound or the like (10/10-11).

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anna L. Verderame whose telephone number is (571) 272-6420. The examiner can normally be reached on M-F 8A-4:30P.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on (571)272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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